Remarks

The paper is filed further to a Notice of Omitted Items mailed in connection with this application on January 11, 2002 (the "Notice"). The Notice concerned Figure 8, which was inadvertently omitted from the figures filed with this application. Because Figure 8 is not necessary to understand or practice the claimed invention, the specification has been amended to remove all mention of it, as shown in the marked-up copy of the amendments attached hereto as Appendix A. No new matter has been added.

Respectfully submitted,

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Appendix A
Marked-up Version of the Amendments

In The Specification

On page 4, please delete lines 12-13.

Please amend the paragraph starting at page 16, line 18, as follows:

[The top panel of FIG. 8 shows the transformed signals from wells 5 (negative) and 19 (positive) of the data described in Example 1.] Using transformed signals from wells 5 and 19 of the data described in Example 1, residuals from fitting a linear growth model to the negative (well 5) and positive (well 19) profiles were obtained. In the case of well 5, where the signal growth is linear, the residuals exhibit the expected behavior; they are distributed about zero and cross the "zero line" very frequently. By contrast, the residuals from well 19, [( ]where the signal growth is quadratic, [see the top panel of FIG. 8)] cluster on the positive side of zero and the negative side of zero, and do not cross the zero line as frequently. The larger the deviation from linearity, the fewer the number of crossing. Thus, the number of zero crossings in a population of residuals obtained after fitting a linear model to a time-varying profile, in this case the transformed signal *vs.* the transformed time, is an indicator of how significantly the profile deviates from a straight line. *See, e.g.*, S. Siegel, "Nonparametric Statistics," McGraw-Hill, New York, 1956, p52; and N. Draper and H. Smith, "Applied Regression Analysis," Third Edition, John Wiley & Sons, Inc., New York, 1998, p192.

Please amend the paragraph starting at page 17, line 28, as follows:

The [middle and bottom panels for FIG. 8 show the] r* values estimated by Equation (6) for wells 5 and 19 were obtained. In the case of well 5, the normalized number of runs is within half a standard deviation unit from the expected mean; the linear model is, therefore, accepted. In the case of well 19, the normalized number of runs is more than 23 standard deviation units from the expected mean and the linear model is rejected. While many statistical models may be used, Tchebycheff's model provides a robust, and conservative, approach. *See, e.g.*, R. Kirk, "Introductory

Statistics," Wadsworth Publishing Company, Inc., Belmont, CA, 1978, p83. Tchebycheff's theorem can be summarized as shown in equation (7):

$$P\{|x - \mu| \geq k\sigma\} < 1/k^2 \qquad (7)$$